Geometry Workbook

Congruence

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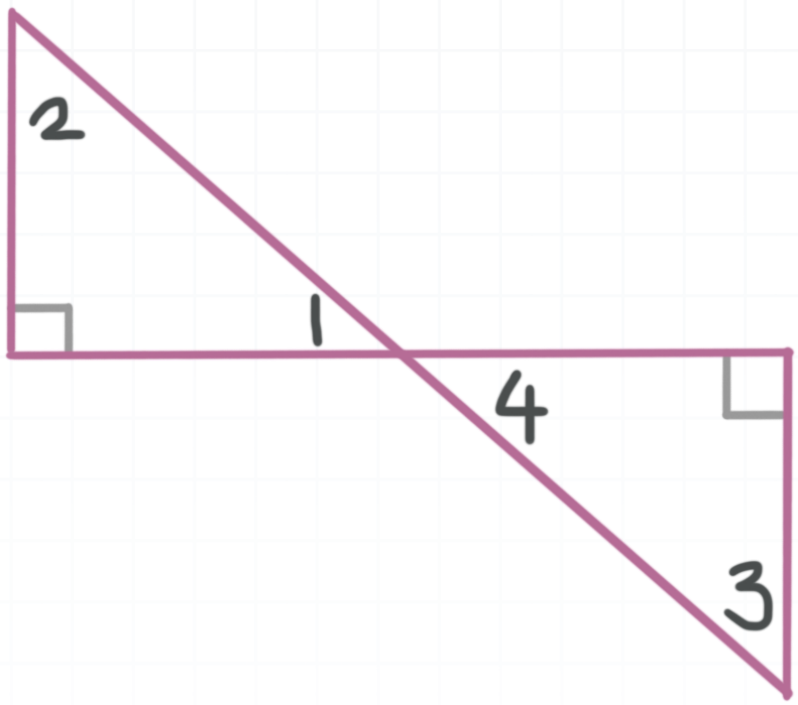
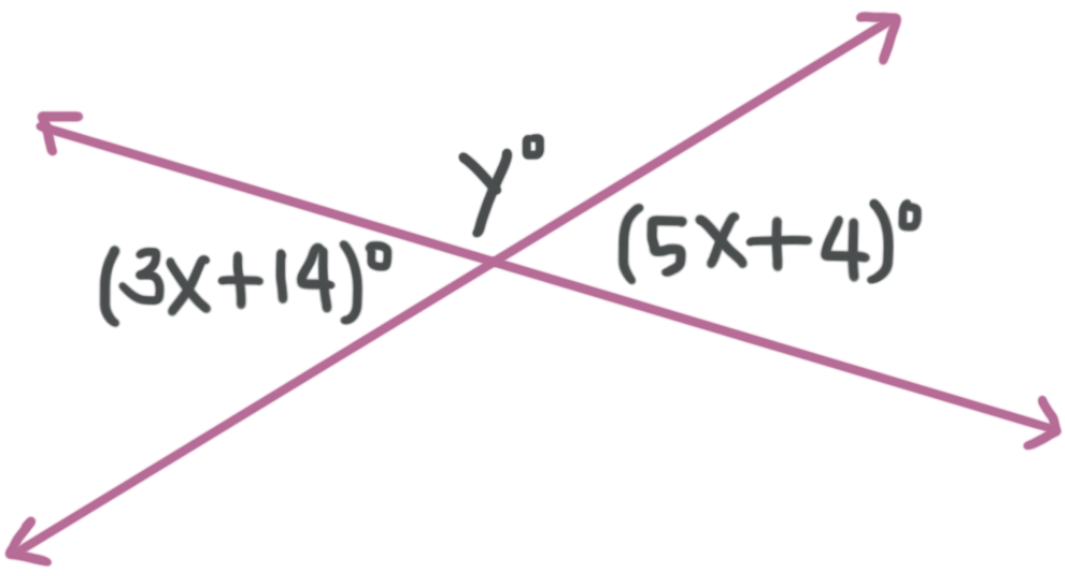
MATH

CONGRUENT ANGLES

■ 1. $m\angle 3 = 4x - 11$ and $m\angle 1 = 5x + 2$. Find $m\angle 2$.



■ 2. Find the values of x and y.



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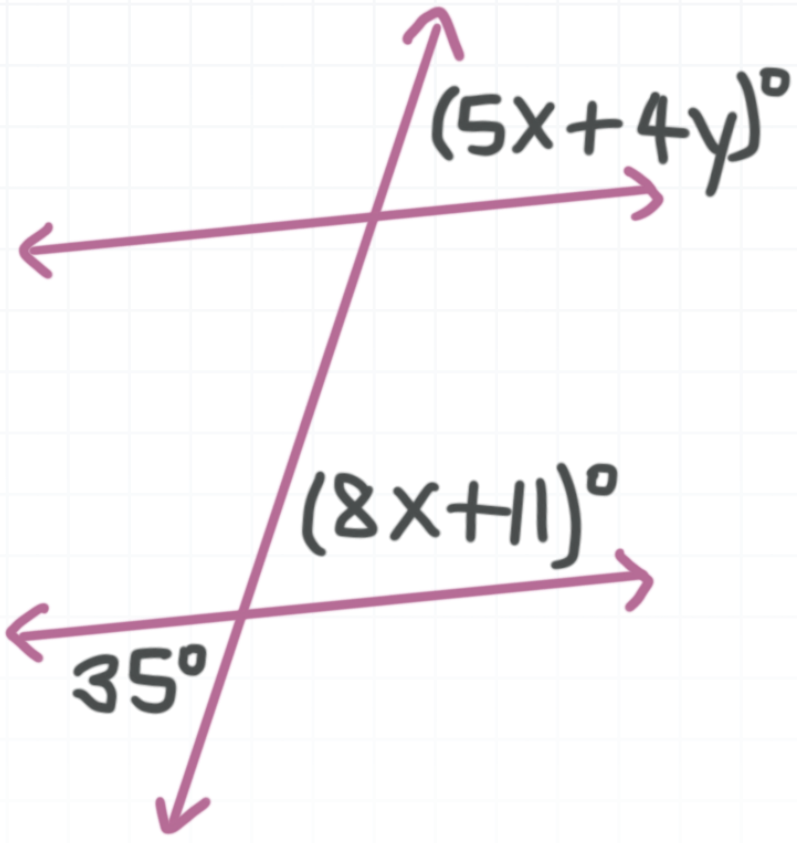
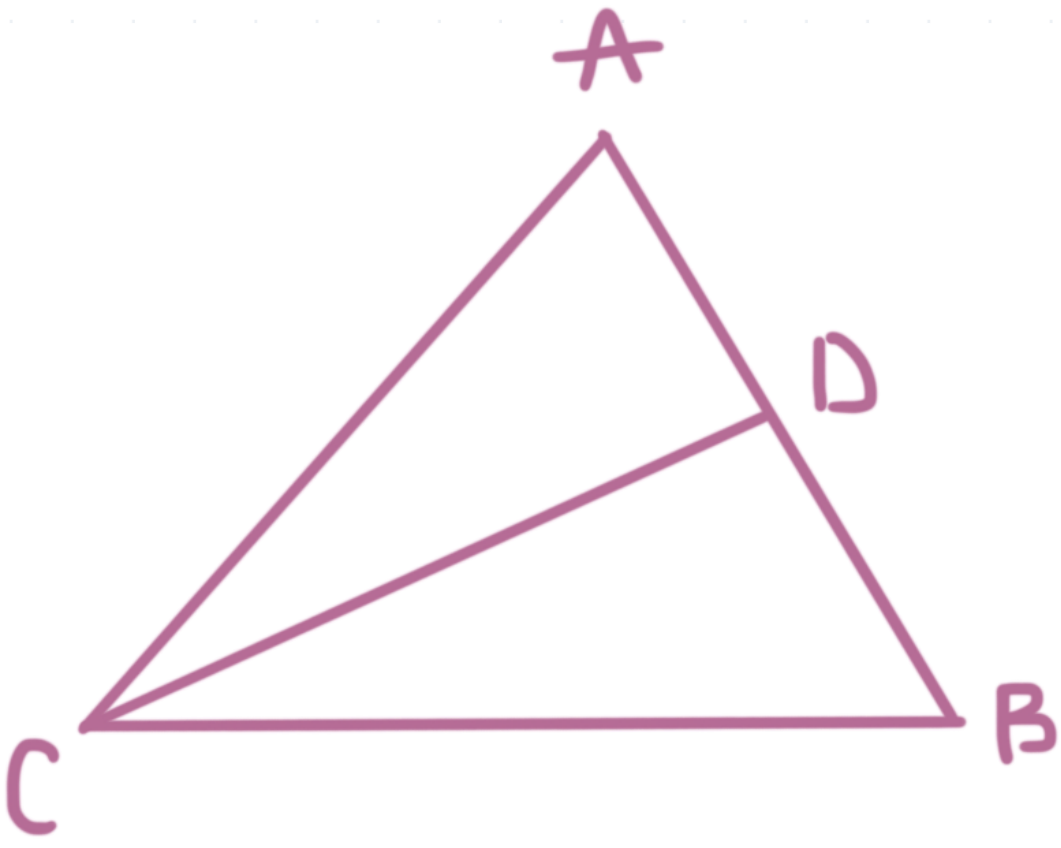
3. Find the value of x and y.



4. $\overline{CD}$ is an angle bisector of the triangle and $\overline{CD} \perp \overline{AB}$. $m\angle CAD = 5x - 10$ and $m\angle BCD = 25$. Find x.



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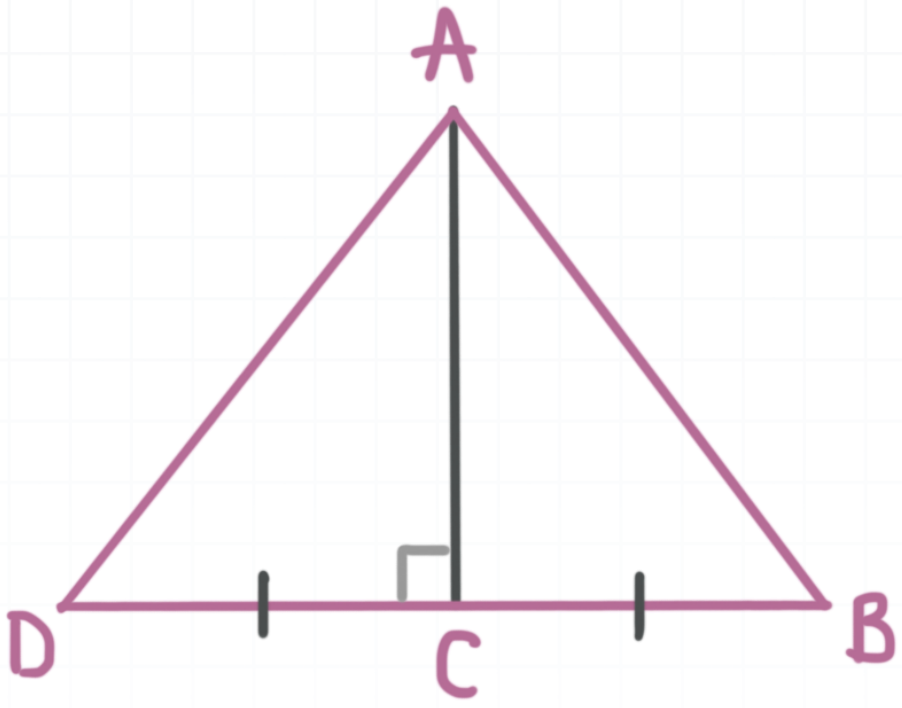
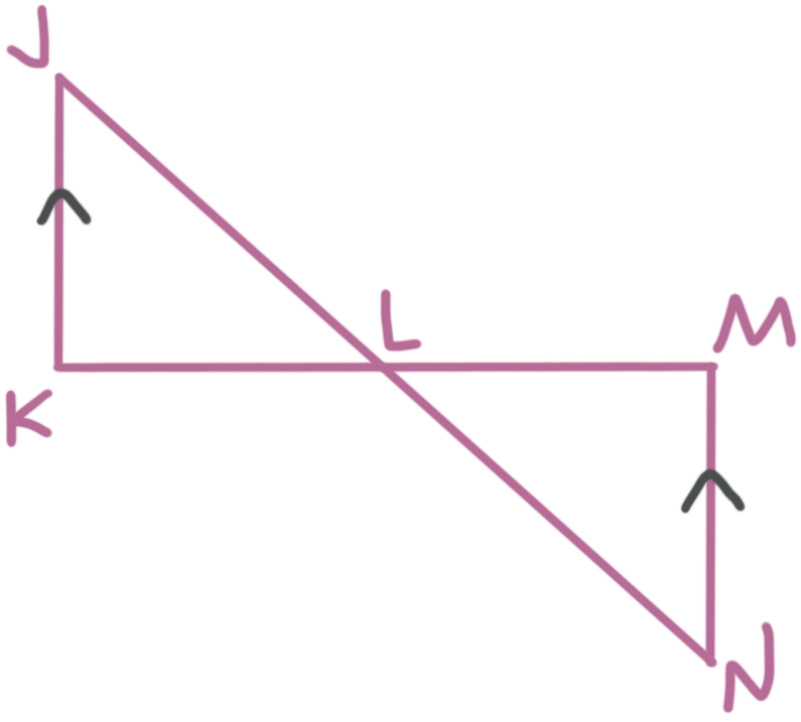
TRIANGLE CONGRUENCE WITH SSS, ASA, SAS

■ 1. Fill in the blank. $\triangle ABC \cong \triangle ADC$ by the _____ Theorem.



■ 2. Fill in the blank. L is a midpoint of $\overline{JN}$. $\triangle JKL \cong \triangle NML$ by the _____ Theorem.



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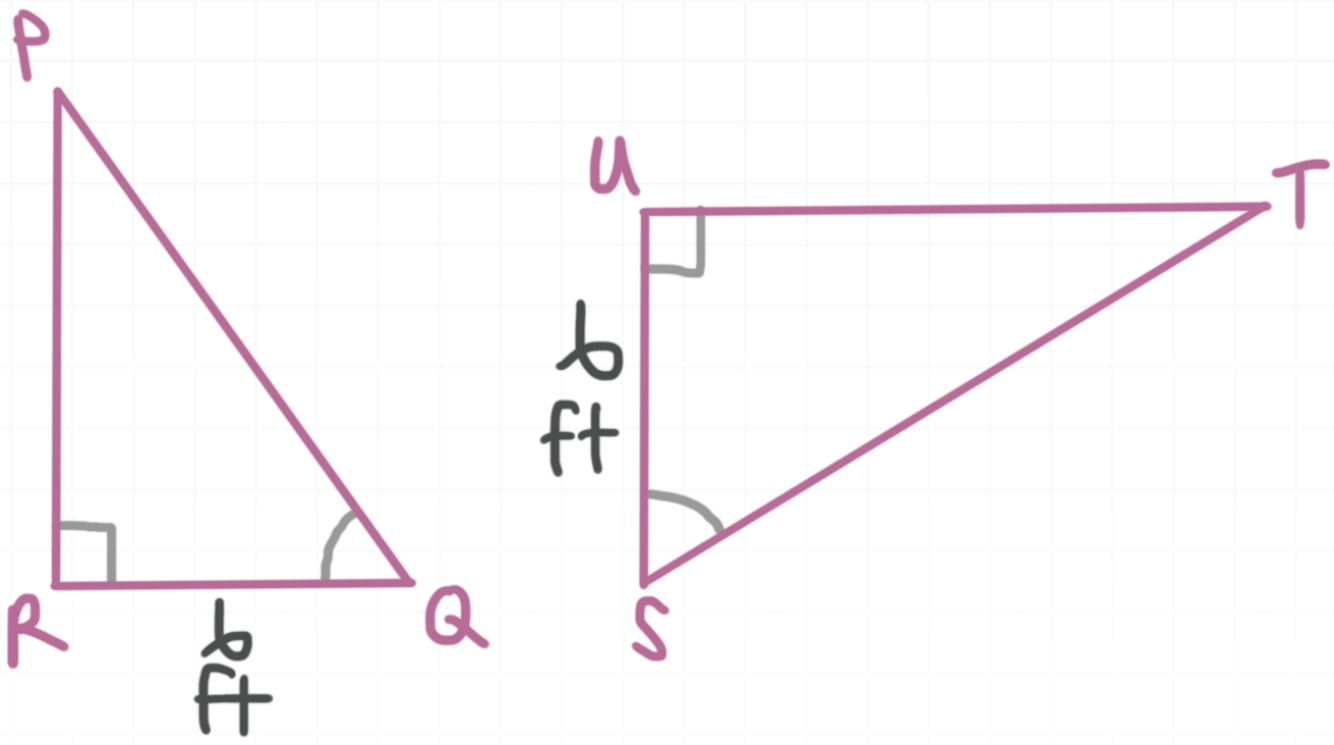
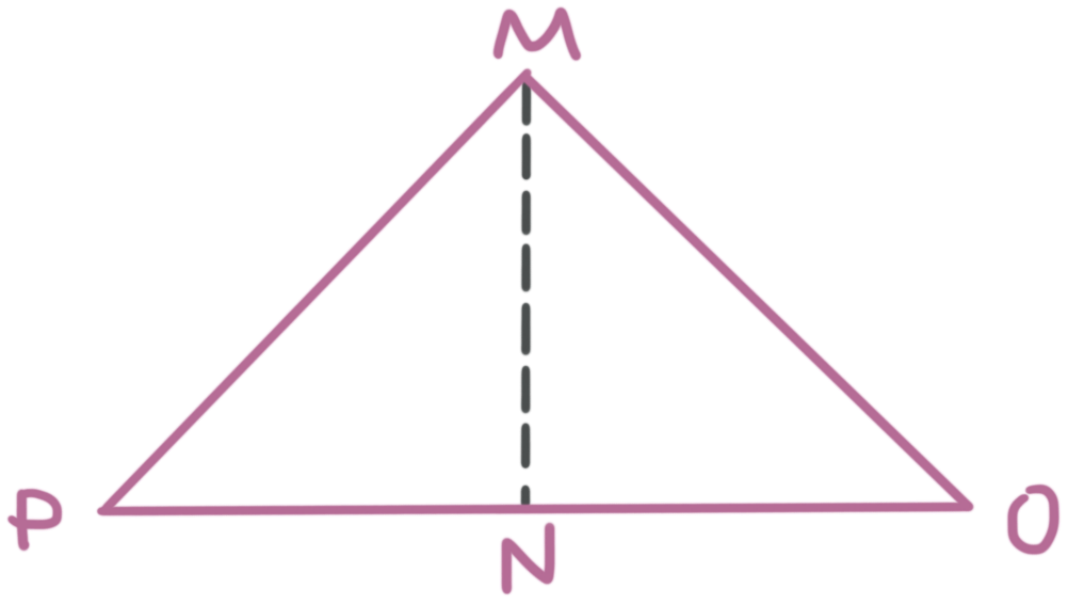
■ 3. $\triangle PRQ \cong \triangle$ _____ by the _____ Theorem.



■ 4. $\triangle PMD$ is an isosceles triangle with vertex angle at M. N is a midpoint of $\overline{PD}$. $\triangle PMN \cong \triangle DMN$ by the _____ Theorem.



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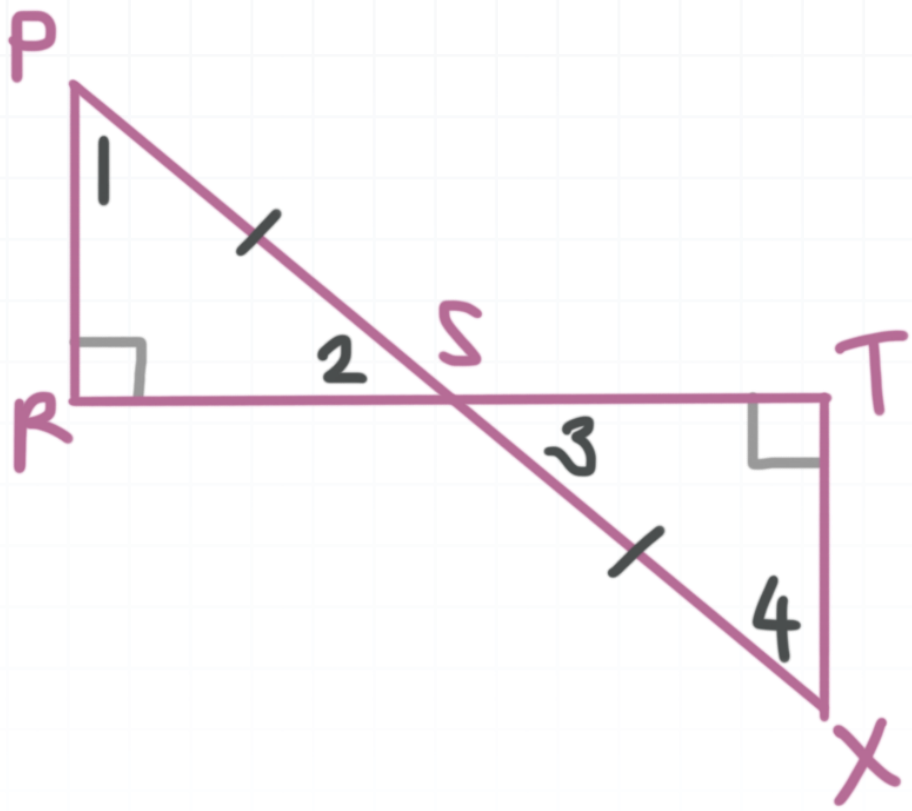
TRIANGLE CONGRUENCE WITH AAS, HL

■ 1. Which theorem could be used to prove $\triangle PRS \cong \triangle XTS$?



■ 2. Which theorem could be used to prove $\triangle ACB \cong \triangle ECD$? The following facts are given about the triangles.

$\overline{AE} \perp \overline{BC}$, $\overline{AB} \cong \overline{DC}$, and C is a midpoint of $\overline{AE}$

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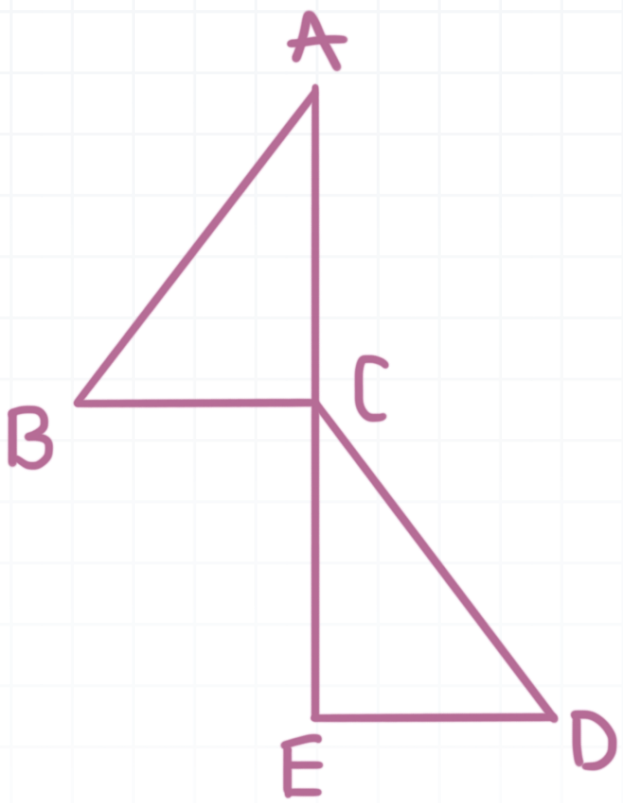
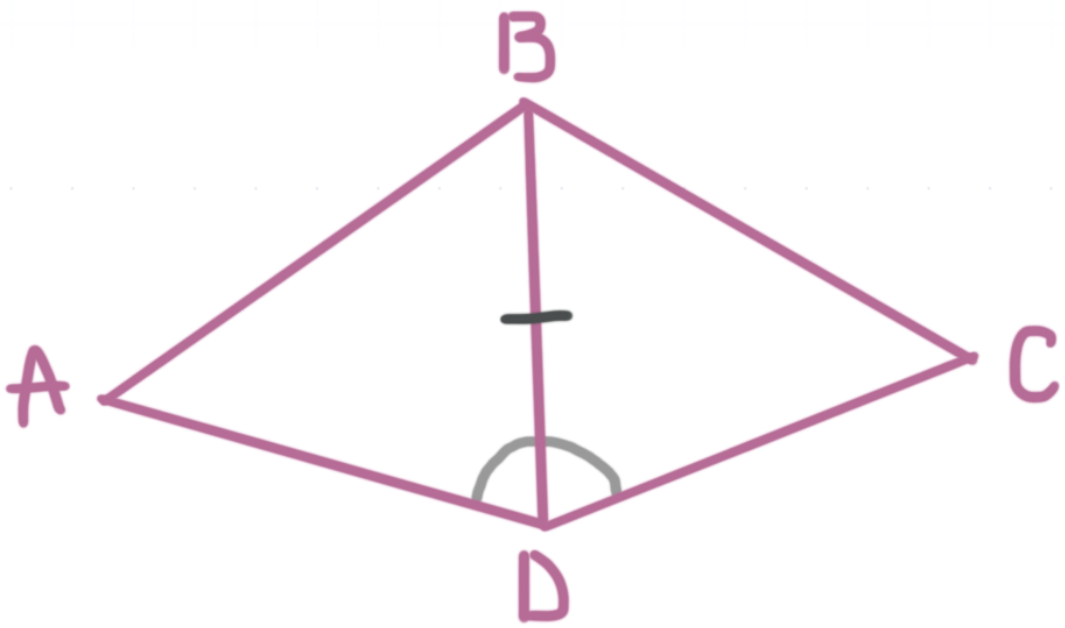


■ 3. What additional information would we need to prove these triangles are congruent using AAS Theorem?



■ 4. $ABCD$ is a rectangle. BEC is an isosceles triangle with vertex angle at E. Write a proof to verify that $\triangle BAE \cong \triangle CDE$ by the HL Theorem.

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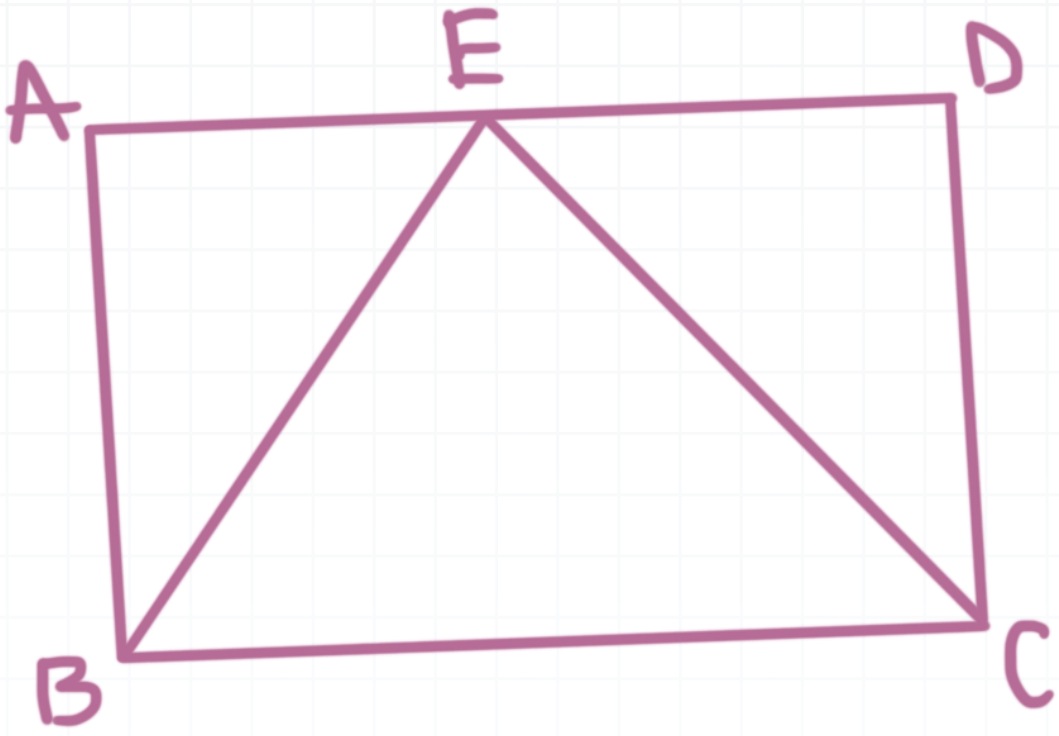

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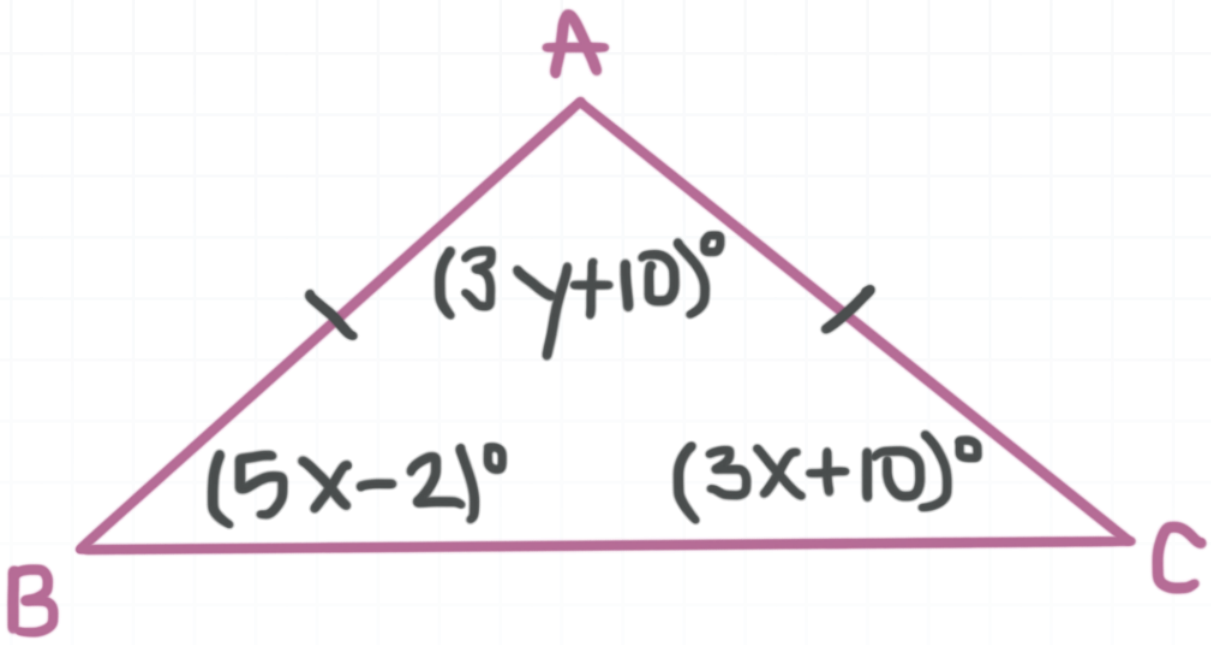
ISOSCELES TRIANGLE THEOREM

■ 1. Find the values of x and y.



■ 2. $\triangle JKL$ is isosceles with vertex angle K. $JK = 4x - 5$, $LK = 3x + 8$, and $m\angle J = 2x + 4$. Find $m\angle L$.

■ 3. Find $m\angle ABC$.

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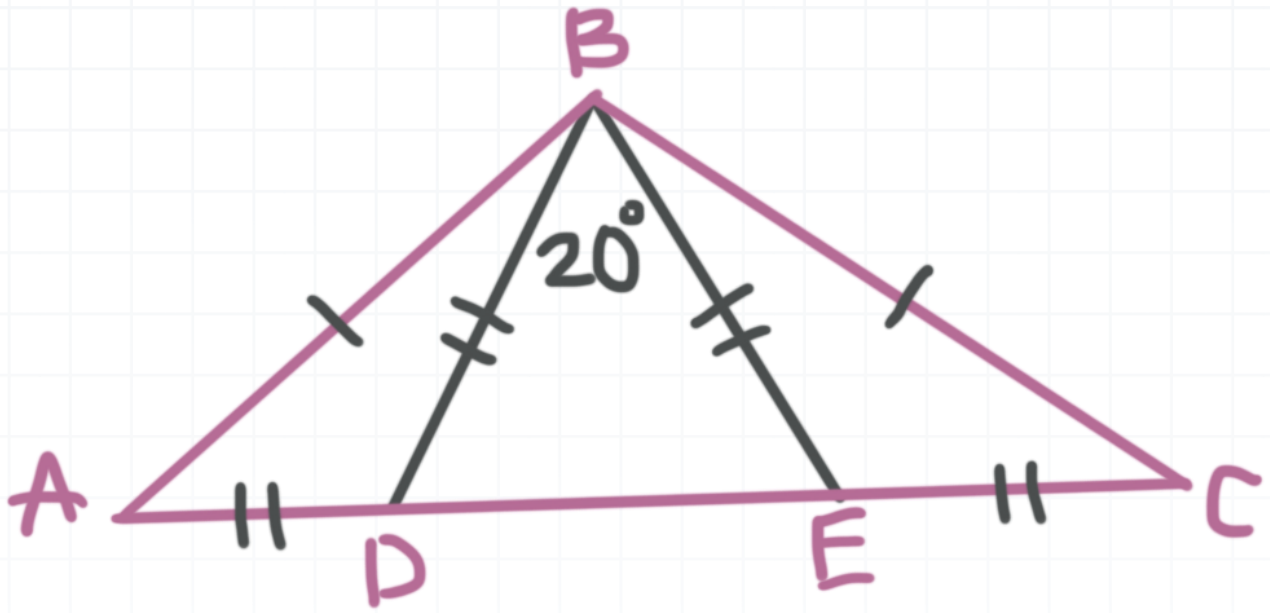
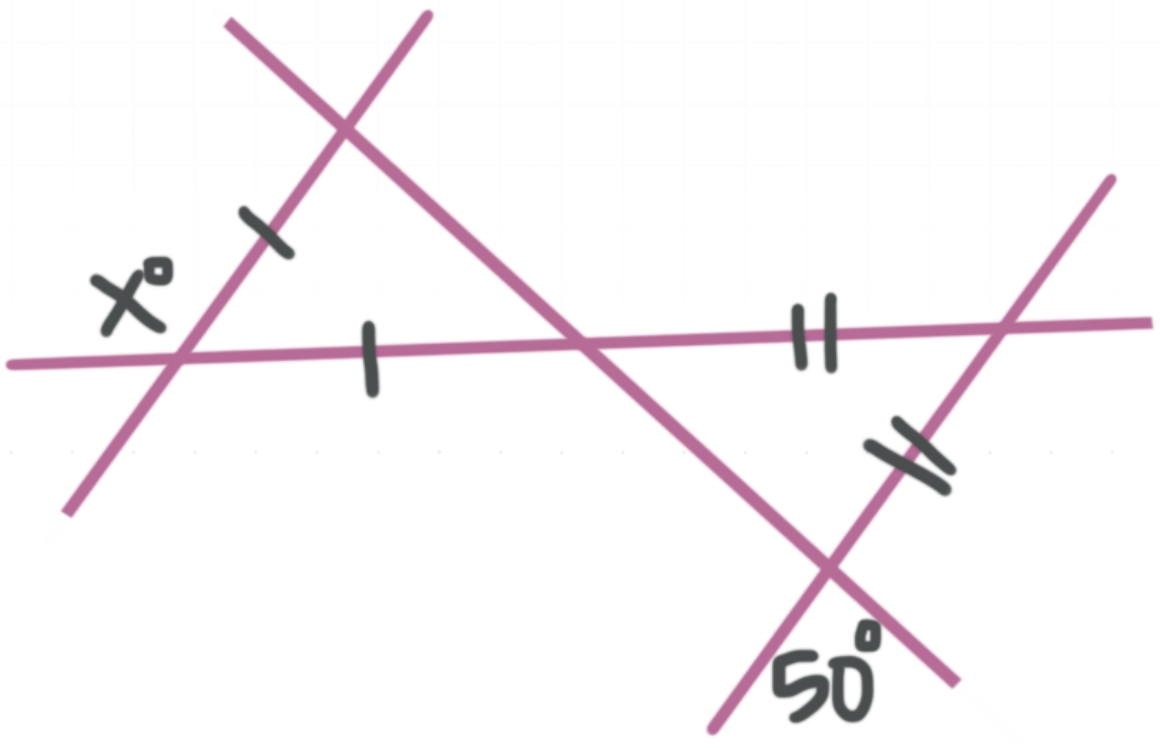


4. Find x.



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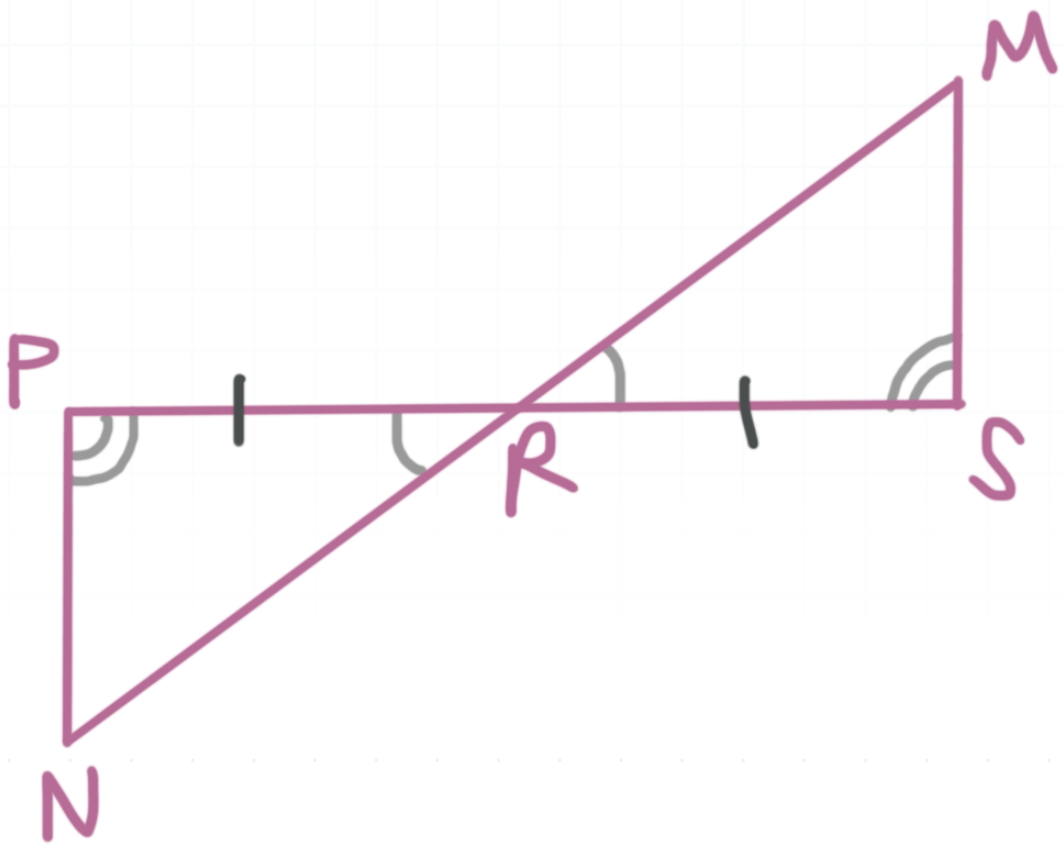
CPCTC

■ 1. Fill in the blank. Given $\triangle LMO \cong \triangle SQR$, $\overline{LO} \cong$ _____.

■ 2. Determine whether $\angle M \cong \angle N$. Justify your answer.



■ 3. $\triangle DOG \cong \triangle TCA$ by SSS. What three conclusions can be drawn by CPCTC?

■ 4. Given $\angle 1 \cong \angle 3$ and $\angle 2 \cong \angle 4$, prove $\overline{AB} \cong \overline{CD}$.

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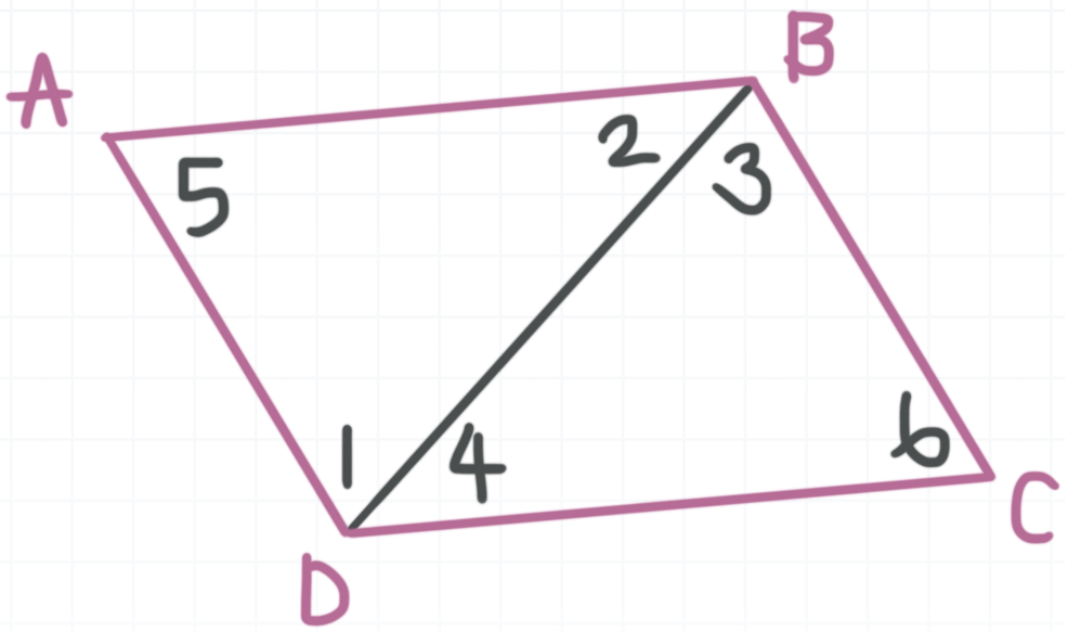
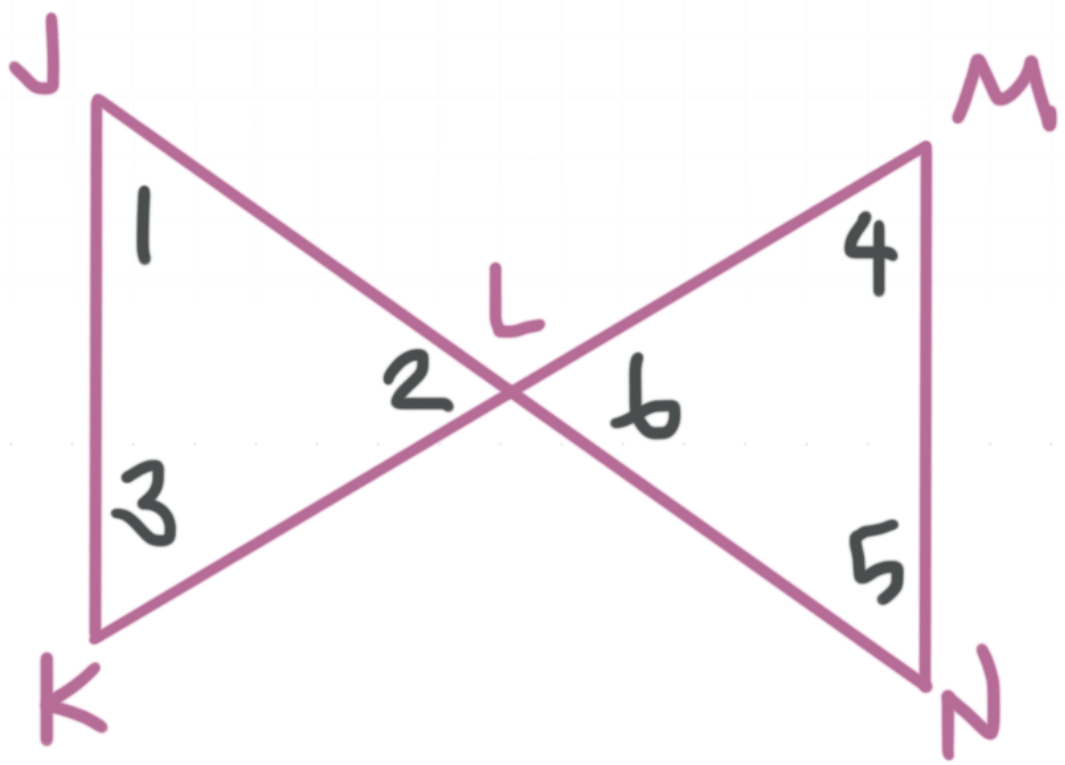


■ 5. Given that L is the midpoint of $\overline{JN}$ and $\overline{KM}$, prove $\overline{JK} \cong \overline{NM}$.



■ 6. Given that $\triangle CAB$ is an isosceles triangle, that D is the midpoint of $\overline{CE}$, and that E is the midpoint of $\overline{BD}$, prove that $\triangle DAE$ is isosceles.

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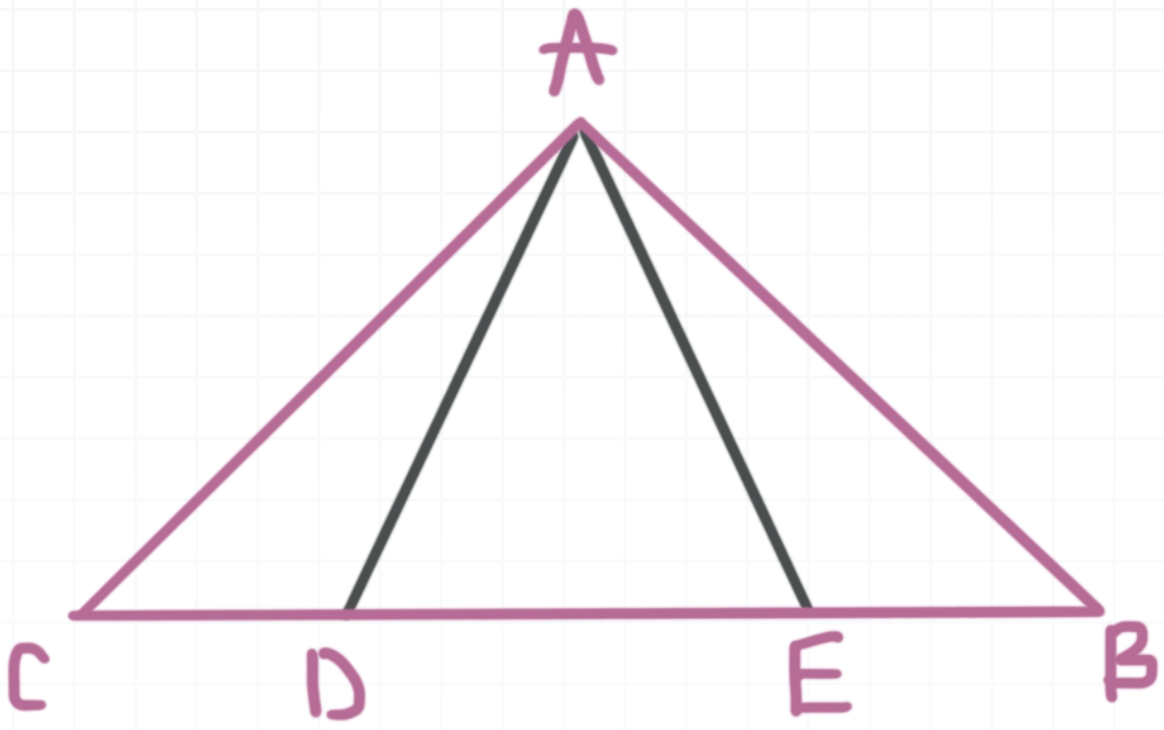

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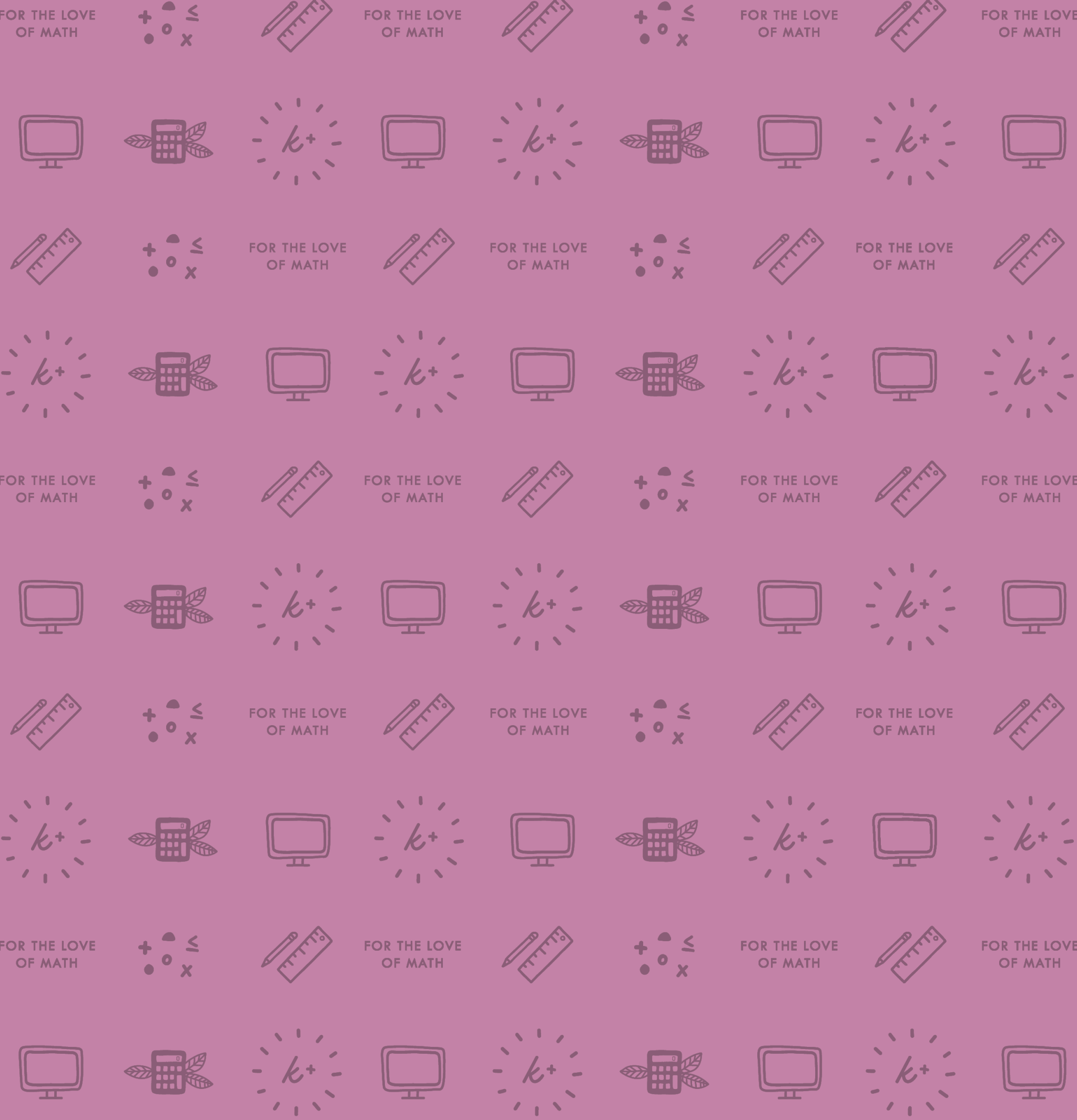

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